AT&T Services, Inc.
2600 Camino Ramon, Rm 3E450Z
San Ramon, CA 94583

T: 925.327.2532
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June 9, 2014

Mr. Barry Stephens
Department of Environment and Conservation
Tennessee Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243

Re: Emergency Generator Construction Permit Applications
Twenty-Two (22) Separate Cell Towers in Tennessee

Dear Mr. Stephens:

On behalf of New Cingular Wireless PCS, LLC dba AT&T Mobility (referred to herein as "AT&T"), we are submitting the enclosed construction permit applications for approval of twenty-one (21) new Kohler Model 50REOZJE-T diesel-fired emergency generators and one (1) new Generac Model SG050 propane-fired emergency generator located at twenty-two (22) separate cell towers in Tennessee. Information regarding the facility locations is as follows:

- 1068 East Wolf Valley Road, Clinton, TN 37716
- 2789 Dutch Valley Road, Clinton, TN 37716
- 1037 Thrasher Drive, Kingston Springs, TN 37082
- 3120 Bidwell Road, Pleasant View, TN 37146
- 467 Joslin Branch Road, White Bluff, TN 37187
- 1 Ragan Levee Road, Dyersburg, TN 38024
- 904 Parker Creek Road, Bon Aqua, TN 37025
- 3183 Old Greenbrier Pike, Greenbrier, TN 37073
- 134 Industrial Drive, White House, TN 37188
- 4091 Little Rock Road, Eagleville, TN 37060
- 327 Blair Road, La Vergne, TN 37086
- 122 Lost Creek Lane, Carthage, TN 37030
- 7767 Bethel Road, Goodlettsville, TN 37072
- 2650 Stoneman Road, McMinnville, TN 37110
- 8217 Alamo Drive, Brentwood, TN 37027
- 8527 Horton Hwy, College Grove, TN 37046
- 2274 Big Sky Lane, Franklin, TN 37067
- 5596 Hargrove Road, Franklin, TN 37064 (propane unit)
- 650 Bakers Bridge Ave, Franklin, TN 37067
- 7377 Nolensville Road, Nolensville, TN 37135
- 1038 Stanley Drive, Mount Juliet, 37122
- 912 Guill Road, Mount Juliet, 37122

The diesel-fired generators are to be installed in November 2014. The propane-fired generator is to be installed in January 2015. Each generator is rated at 50 kW. The diesel-fired engines were manufactured in 2014 by John Deere. The propane-fired engine was manufactured in 2013 by Generac. All diesel engines meet the U.S. EPA Tier 3 limits required for engines of this size. The propane engine also meets U.S. EPA limits for propane engines of this size. Attachment C of this letter contains the generator specifications.

Applicability to New Source Performance Standards (NSPS) Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* will be based on the manufacture dates. AT&T is aware of engine NSPS/NESHAP requirements and will comply with those requirements as they apply to these engines. A summary of our understanding of the requirements is as follows:

Diesel engines manufactured after April 1, 2006 are subject to New Source Performance Standards Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, which requires:

- usage of a certified engine (per 40 CFR 60.4205(b) and 60.4211(c))
- operation and maintenance of the engine in accordance with the manufacturer's instructions (per 40 CFR 60.4206 and 60.4211(a))
- the emergency engine must be equipped with a non-resettable hour meter if not certified to meet non-emergency standards (per 40 CFR 60.4209(a))
- a limit of 100 hr/yr for non-emergency maintenance and testing purposes with up to 50 of the hours for non-emergency usage (per 40 CFR 60.4211(f))[1]
- ULSD with a maximum sulfur content of 15 ppm is required to be purchased after October 1, 2010 (40 CFR 60.4207(b))
- maintain appropriate records and submit an annual report for Calendar Year 2015 and later years if the engine is > 100 hp and participates or is contractually obligated to participate for 15 hr/yr or more in an emergency demand response program, during voltage/frequency deviations of 5% or more, or participates in any financial arrangement defined by 40 CFR 60.4211(f)(3) (per 40 CFR 60.4214(d))

Since the new diesel engines are at area sources, per 40 CFR 63.6590(c)(1), AT&T will also satisfy the requirements of the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR 63 Subpart ZZZZ, for the new engines by complying with NSPS Subpart IIII.

Propane engines manufactured on or after January 1, 2009 are subject to New Source Performance Standards Subpart JJJJ, *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*, which has the following requirements:

---

[1] The 100 hr/yr may also include operation in an emergency demand response program or when voltage or frequency deviations exceed 5% as defined under 40 CFR 60.4211(f)(2)(ii) and (iii).

- usage of an engine certified to meet the emissions standards in Table 1 for emergency engines (40 CFR 60.4233(d) & (e) and 60.4243(b)(1))
- the emergency engine must be equipped with a non-resettable hour meter if it is not certified to meet the standards applicable to non-emergency engines (40 CFR 60.4237(c) and 60.4245(b))
- a limit of 100 hr/yr for non-emergency maintenance and testing purposes with up to 50 of those hours for non-emergency usage (40 CFR 60.4243(d))
- keep records of maintenance conducted on the engine and copy of manufacturer's certification statement (40 CFR 60.4245(a))

Since the new propane engine is at an area source, per 40 CFR 63.6590(c)(1), AT&T will also satisfy the requirements of the 40 CFR 63 Subpart ZZZZ by complying with NSPS Subpart JJJJ.

Each engine will be limited to a maximum of 500 hours per year of operation (with only 100 hours per year for non-emergency maintenance and testing purposes as allowed by NSPS Subpart IIII and Subpart JJJJ). Potential emissions, included in Attachment B, reflect the 500 hours per year limitation for emergency generators. Note the calculations have been performed using the U.S. EPA Tier 3 limits, AP-42 emission factors, and/or emission factors provided by the vendor and consider the maximum rated capacity of the engine for conservatism.

Please find attached complete sets of permit application forms for each of the emergency generators, including Tennessee Department of Environment and Conservation (TDEC) forms APC-100, APC-101, and APC-102, in Attachment A. Emission calculations for the new engines are included in Attachment B. Manufacturer's specifications and the EPA emissions certification forms are included in Attachment C. Additionally, a $2,200 check is enclosed since potential emissions (when excluding CO_2) are less than 10 tpy from each engine ($100 for each of the 22 sites).

AT&T appreciates TDEC's review of these applications. If you have any questions, or need further information, please do not hesitate to contact me at (925) 327-2532.

Sincerely,

AT&T SERVICES, INC.

Barbara Walden

Barbara Walden
Manager, Environment, Health & Safety

Attachments
Enclosure

ATTACHMENT A

APPLICATION FORM

State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243
Telephone: (615) 532-0554

APC 100

NON-TITLE V PERMIT APPLICATION
FACILITY IDENTIFICATION

Please type or print and submit in duplicate for each emission source. Attach appropriate source description forms.

SITE INFORMATION

1. **Organization's legal name** New Cingular Wireless PCS, LLC dba AT&T Mobility			For APC use only: APC Compan 75-0738 APC Log/Permit no. 94886P
2. **Site name** (if different from legal name)			
3. **Site address** (St./Rd./Hwy.) 327 Blair Road			County name Rutherford
City or distance to nearest town La Vergne	Zip code 37086		4. NAICS or SIC code 517210
5. **Site location** (in lat. /long.)	Latitude 35.981722° (35° 58' 54.2")		Longitude -86.582500° (-86° 34' 57")

CONTACT INFORMATION (RESPONSIBLE PERSON)

6. **Responsible person/Authorized contact** Jalayna Bolden, Assistant Secretary			Phone number with area code (925) 327-2532
Mailing address (St./Rd./Hwy.) 2600 Camino Ramon, Room 3E450Z			Fax number with area code (281) 664-4201
City San Ramon	State CA	Zip code 94583	Email address bw2989@att.com

CONTACT INFORMATION (TECHNICAL)

7. **Principal technical contact** Barbara Walden, EH&S Manager			Phone number with area code (925) 327-2532
Mailing address (St./Rd./Hwy.) 2600 Camino Ramon, Room 3E450Z			Fax number with area code (281) 664-4201
City San Ramon	State CA	Zip code 94583	Email address bw2989@att.com

CONTACT INFORMATION (BILLING)

8. **Billing contact** Barbara Walden, EH&S Manager			Phone number with area code (925) 327-2532
Mailing address (St./Rd./Hwy.) 2600 Camino Ramon, Room 3E450Z			Fax number with area code (281) 664-4201
City San Ramon	State CA	Zip code 94583	Email address bw2989@att.com

EMISSION SOURCE INFORMATION

9. **Emission source no.** (number which uniquely identifies this source)
GEN 1

10. **Brief description of emission source**
50 kW diesel-fired emergency generator (design rating) equipped with an engine rated at 63 kW (85 hp).

11. **Normal operation:** 500 hours/year	Hours/Day N/A	Days/Week N/A	Weeks/Year N/A	Days/Year N/A
12. **Percent annual throughput**	Dec. – Feb. N/A	March – May N/A	June – August N/A	Sept. – Nov. N/A

(Over)

TYPE OF PERMIT REQUESTED

13. Operating permit ( )	Date construction started	Date completed	Last permit no.	Emission source reference number

Construction permit (X)	Last permit no.	Emission source reference number
	N/A	GEN 1

If you choose Construction permit, then choose either New Construction, Modification, or Location transfer

	New Construction (X)	Starting date: November 2014	Completion date: November 2014
	Modification ( )	Date modification started or will start	Date completed or will complete
	Location transfer ( )	Transfer date	Address of last location

14. Describe changes that have been made to this equipment or operation since the last construction or operating permit application:

N/A

SIGNATURE

Based upon information and belief formed after a reasonable inquiry, I, as the responsible person of the above mentioned facility, certify that the information contained in this application and any attached application(s) is accurate and true to the best of my knowledge. As specified in TCA Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

15. **Signature** (application must be signed before it will be processed)		**Date** 6/11/14
Signer's name (type or print) Jalayna Bolden	**Title** Assistant Secretary	**Phone number with area code** (925) 327-2532

Table of Pollution Reduction Device or Method Codes

Note: For cyclones, settling chambers, wet scrubbers, and electrostatic precipitators; the efficiency ranges correspond to the following percentages:
High: 95-99+%. Medium: 80-95% And Low: Less than 80%.
If the system has several pieces of connected control equipment, indicate the sequence. For example: 008'010.97%
If none of the below codes fit, use 999 as a code for other and specify in the comments.

No Equipment	000
Activated Carbon Adsorption	048
Afterburner – Direct Flame	021
Afterburner – Direct Flame with Heat Exchanger	022
Afterburner – Catalytic	019
Afterburner – Catalytic with Heat Exchanger	020
Alkalized Alumina	040
Catalytic Oxidation – Flue Gas Desulfurization	039
Cyclone – High Efficiency	007
Cyclone – Medium Efficiency	008
Cyclone – Low Efficiency	009
Dust Suppression by Chemical Stabilizers or Wetting Agents	062
Electrostatic Precipitator – High Efficiency	010
Electrostatic Precipitator – Medium Efficiency	011
Electrostatic Precipitator – Low Efficiency	012
Fabric Filter – High Temperature	016
Fabric Filter – Medium Temperature	017
Fabric Filter – Low Temperature	018
Fabric Filter – Metal Screens (Cotton Gins)	059
Flaring	023
Gas Adsorption Column -- Packed	050
Gas Adsorption Column – Tray Type	051
Gas Scrubber (General: Not Classified)	013
Limestone Injection – Dry	041
Limestone Injection – Wet	042
Liquid Filtration System	049
Mist Eliminator – High Velocity	014
Mist Eliminator – Low Velocity	015
Process Change	046
Process Enclosed	054
Process Gas Recovery	060
Settling Chamber – High Efficiency	004
Settling Chamber – Medium Efficiency	005
Settling Chamber – Low Efficiency	006
Spray Tower (Gaseous Control Only)	052
Sulfuric Acid Plant – Contact Process	043
Sulfuric Acid Plant – Double Contact Process	044
Sulfur Plant	045
Vapor Recovery System (Including Condensers, Hooding and Other Enclosures)	047
Venturi Scrubber (Gaseous Control Only)	053
Wet Scrubber – High Efficiency	001
Wet Scrubber – Medium Efficiency	002
Wet Scrubber – Low Efficiency	003
Wet Suppression by Water Sprays	061

Table of Emission Estimation Method Codes

Not application / Emissions are known to be zero	0
Emissions based on source testing	1
Emissions based on material balance using engineering expertise and knowledge of process	2
Emissions calculated using emission factors from EPA publications No. AP-42 Compilation of Air Pollution Emissions Factors	3
Judgment	4
Emissions calculated using a special emission factor different from that in AP-42	5
Other (Specify in comments)	6

State of Tennessee
Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Avenue, 15th Floor
Nashville, TN 37243
Telephone: (615) 532-0554

NON-TITLE V PERMIT APPLICATION
EMISSION POINT DESCRIPTION

Please type or print and submit in duplicate for each stack or emission source. Attach to the Non-Title V Facility Identification Form (APC 100).

GENERAL IDENTIFICATION AND DESCRIPTION

1. Organization name New Cingular Wireless PCS, LLC dba AT&T Mobility		For APC use only	APC Company point no.
2. Emission source no. (As on Non-Title V Facility Identification Form) GEN 1	Flow diagram point number		APC Log/Permit no.
3. Brief emission point description (Attach a sketch if appropriate): Emergency use diesel generator designed for 50 kW; maximum engine output of 63 kW (85 hp).			Distance to nearest property line (Ft.)

STACK AND EMISSION DATA

4. Stack or emission point data: →	Height above grade (Ft.)	Diameter (Ft.)	Temperature (°F)	% of time over 125°F	Direction of exit (Up, down or horizontal)
	7	0.27	1,074	100	Up

Data at exit conditions: →	Flow (actual $Ft.^3$/Min.)	Velocity (Ft./Sec.)	Moisture (Grains/$Ft.^3$)	Moisture (Percent)
	679	194.3		

Data at standard conditions: →	Flow (Dry std. $Ft.^3$/Min.)	Velocity (Ft./Sec.)	Moisture (Grains/$Ft.^3$)	Moisture (Percent)

5. Air contaminants	Actual emissions: Emissions (Lbs./Hr.) Average	Emissions (Lbs./Hr.) Maximum	Concentration	Avg. emissions (Tons/Yr.)	Emissions est. method code	Control devices *	Control efficiency%
Particulate matter	0.06	0.06	** 8.82E-04 lb/kW-hr	0.01	5 (Tier 3)	None	N/A
Sulfur dioxide (SO_2)	0.17	0.17	*** 2.05E-03 lb/hp-hr	0.04	3	None	N/A
Carbon monoxide (CO)	0.69	0.69	PPM 1.10E-02 lb/kW-hr	0.17	5 (Tier 3)	None	N/A
Organic compounds	0.21	0.21	PPM 2.51E-03 lb/hp-hr	0.05	3	None	N/A
Nitrogen oxides (NO_X)	0.65	0.65	PPM 1.04E-02 lb/kW-hr	0.16	5 (Tier 3)	None	N/A
Fluorides							
Greenhouse gases (CO_2 equivalents)	98.12	98.12	1.15 lb/hp-hr	24.53	3	None	N/A
Hazardous air pollutant (specify) Single- formaldehyde	7.02E-04	7.02E-04	8.26E-06 lb/hp-hr	1.76E-04	3	None	N/A
Hazardous air pollutant (specify) Total	2.26E-03	2.26E-03	2.65E-05 lb/hp-hr	5.64E-04	3	None	N/A
Other (specify)							
Other (specify)							
Other (specify)							

(Over)

6. Check types of monitoring and recording instruments that are attached: Opacity monitor ( ), SO_2 monitor (X), NO_X monitor ( ), Other (specify in comments) (X)	
7. Comments AP-42 factors from Section 3.3 used for SO2 and VOC. AP-42 factors from Section 3.3 & 3.4 and 40 CFR 98 used for GHG.	
8. Control device or Method code description:	Description of operating parameters of device (flow rate, temperature, pressure drop, etc.): N/A

* Refer to the tables below for estimation method and control device codes.

** Exit gas particulate matter concentration units: Process – Grains/Dry Standard Ft^3 (70^0F), Wood fired boilers - Grains/Dry Standard Ft^3 (70^0F), all other boilers – Lbs. /Million BTU heat input.

*** Exit gas sulfur dioxide concentrations units: Process – PPM by volume, dry bases, and boilers – Lbs. /Million BTU heat input

Table of Pollution Reduction Device or Method Codes
(Alphabetical listing)

Note: For cyclones, settling chambers, wet scrubbers, and electrostatic precipitators; the efficiency ranges correspond to the following percentages:
High: 95-99+%. Medium: 80-95% And Low: Less than 80%.
If the system has several pieces of connected control equipment, indicate the sequence. For example: 008'010.97%
If none of the below codes fit, use 999 as a code for other and specify in the comments.

No Equipment....000
Activated Carbon Adsorption....048
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Afterburner – Direct Flame with Heat Exchanger....022
Afterburner – Catalytic....019
Afterburner – Catalytic with Heat Exchanger....020
Alkalized Alumina....040
Catalytic Oxidation – Flue Gas Desulfurization....039
Cyclone – High Efficiency....007
Cyclone – Medium Efficiency....008
Cyclone – Low Efficiency....009
Dust Suppression by Chemical Stabilizers or Wetting Agents 062
Electrostatic Precipitator – High Efficiency....010
Electrostatic Precipitator – Medium Efficiency....011
Electrostatic Precipitator – Low Efficiency....012
Fabric Filter – High Temperature....016
Fabric Filter – Medium Temperature....017
Fabric Filter – Low Temperature....018
Fabric Filter – Metal Screens (Cotton Gins)....059
Flaring....023
Gas Adsorption Column -- Packed....050
Gas Adsorption Column – Tray Type....051
Gas Scrubber (General: Not Classified)....013
Limestone Injection – Dry....041
Limestone Injection – Wet....042
Liquid Filtration System....049
Mist Eliminator – High Velocity....014
Mist Eliminator – Low Velocity....015
Process Change....046
Process Enclosed....054
Process Gas Recovery....060
Settling Chamber – High Efficiency....004
Settling Chamber – Medium Efficiency....005
Settling Chamber – Low Efficiency....006
Spray Tower (Gaseous Control Only)....052
Sulfuric Acid Plant – Contact Process....043
Sulfuric Acid Plant – Double Contact Process....044
Sulfur Plant....045
Vapor Recovery System (Including Condensers, Hooding and Other Enclosures)....047
Venturi Scrubber (Gaseous Control Only)....053
Wet Scrubber – High Efficiency....001
Wet Scrubber – Medium Efficiency....002
Wet Scrubber – Low Efficiency....003
Wet Suppression by Water Sprays....061

Table of Emission Estimation Method Codes

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Emissions calculated using emission factors from EPA publications No. AP-42 Compilation of Air Pollution Emissions Factors....3
Judgment....4
Emissions calculated using a special emission factor different from that in AP-42....5
Other (Specify in comments)....6

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NON-TITLE V PERMIT APPLICATION
PROCESS OR FUEL BURNING SOURCE DESCRIPTION

Please type or print and submit in duplicate and attach to the Non-Title V Facility Identification Form (APC 100).

GENERAL IDENTIFICATION AND DESCRIPTION

1. **Organization name**	For APC use only	APC Company – Point no.
New Cingular Wireless PCS, LLC dba AT&T Mobility		
2. Emission source no. (As on Non-Title V Facility Identification Form) GEN 1		APC Log/Permit no.

3. Description of process unit

Emergency use generator, Kohler 50REOZJE-T. Engine manufactured after April 1, 2006. Rated at 50 kW; maximum engine output of 63 kW. Limited to 500 operating hours per year.

PROCESS SOURCE DESCRIPTION AND DATA

4. Type of source	(Check only one option below)
Process Source: Apply for a separate Permit for each source. (Check at right and complete lines 5, 6, and 11)	( )
Process Source with in process fuel: Products of combustion contact materials heated. Apply for a separate permit for each source. (Check at right and complete lines 5, 6, and 8 through 11)	( )
Non-Process fuel burning source: Products of combustion do not contact materials heated. Complete this form for each boiler or fuel burner and complete a Non-Title V Emission Point Description Form (APC 101) for each stack. (Check at right and complete lines 7 to 11)	(X)

5. Type of operation: Continuous ( ) Batch (X)	Normal batch time	Normal batches/day

6. Process material inputs and In-process solid fuels	Diagram reference	Input rates (pounds/hour) Design	Actual
A.			
B.			
C.			
D.			
E.			
F.			
G.			
Totals			

*** A simple process flow diagram must be attached.**

(Over)

BOILER, BURNER, GENERATOR, OR SIMILAR FUEL BURNING PROCESS DESCRIPTION

7. Boiler or burner data: (Complete lines 7 to 11 using a separate form for each boiler, burner, etc.)

Number	Stack number**	Type of firing***	Rated horsepower	Rated input capacity (10^6 BTU/Hr.)	Other rating (specify capacity and units)
GEN 1	GEN 1	Internal Combustion Engine	85 (engine)	0.63 (engine)	63 kW (engine); 50 kW (generator)

Serial no.	Date constructed	Date manufactured	Date of last modification (explain in comments below)
N/A	N/A	2014	

** Source with a common stack will have the same stack number.
*** Cyclone, spreader (with or without reinjection), pulverized (wet or dry bottom, with or without reinjection), other stoker (specify type, hand fired, automatic, or other type (describe below in comments).

FUEL USED IN BOILER, BURNER, GENERATOR, OR SIMILAR FUEL BURNING SOURCE

8. Fuel data: (Complete for a process source with in process fuel or a non-process fuel burning source)

Primary fuel type (specify): Ultra low sulfur diesel

Standby fuel type(s) (specify):

Fuels used	Annual usage	Hourly usage		% Sulfur	% Ash	BTU value of fuel		(For APC use only) SCC code
		Design	Average					
Natural gas:	10^6 Cu. Ft.	Cu. Ft.	Cu. Ft.	/ / / / / / / /	/ / / / /	1,000		
#2 Fuel oil: Primary	10^3 Gal. 2.3	Gal. 4.6	Gal. 4.6	0.0015	/ / / / /	137,000 Btu/gal		
#5 Fuel oil:	10^3 Gal.	Gal.	Gal.		/ / / / /			
#6 Fuel oil:	10^3 Gal.	Gal.	Gal.		/ / / / /			
Coal:	Tons	Lbs.	Lbs.					
Wood:	Tons	Lbs.	Lbs.	/ / / / / / / /	/ / / / /			
Liquid propane:	10^3 Gal.	Gal.	Gal.	/ / / / / / / /	/ / / / /	85,000		
Other (specify type & units):								

9. If Wood is used as a fuel, specify types and estimate percent by weight of bark

N/A

10. If Wood is used with other fuels, specify percent by weight of wood charged to the burner.

N/A

11. Comments

Source is limited to 500 operating hours per year and will operate as an emergency engine.

327 Blair Road, La Vergne (Rutherford County)

ATTACHMENT B

EMISSIONS CALCULATIONS

63 KW X 85 HP

AT&T
Emission Calculations

Emission Calculations - Kohler 50REOZJE-T with John Deere engine

Diesel Fuel Emission Factors

Pollutant	Vendor Emission Factors[1] (lb/kW-hr)	Tier 3 Emission Factors (lb/kW-hr)	AP-42 Emission Factors[2] (lb/hp-hr)
NO_X	9.26E-03	1.04E-02	
CO	2.43E-03	1.10E-02	
PM_{10}	5.29E-04	8.82E-04	
$PM_{2.5}$	5.29E-04	8.82E-04	
SO_2			2.05E-03
VOC			2.51E-03
GHG (CO_2e)[3,4,5]			1.15E+00
HAP (total)[6]			2.65E-05
HAP (single)[7]			8.26E-06

1. Emission factors per John Deere Rating Specific Emissions Data for 2014 John Deere Model 4045TF280D engine in Kohler Model 50REOZJE-T generator.
2. Emission factors per AP-42 Section 3.3 (10/1996), Table 3.3-1, Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines.
3. CO_2 emissions calculated using an emission factor from AP-42 Section 3.3 (10/1996), Table 3.3-1. CO_2 converted to CO_2 equivalent (CO_2e) using a Global Warming Potential of 1.
4. CH_4 emissions calculated using an emission factor from AP-42 Section 3.4 (10/1996), Table 3.4-1 (no factor listed in AP-42 Section 3.3). CH_4 converted to CO_2e using a Global Warming Potential of 25.
5. N_2O emissions calculated using an emission factor from 40 CFR 98 Subpart C, Table C-2 (no factors present in AP-42 Section 3.3 or 3.4). N_2O converted to CO_2e using a Global Warming Potential of 298.
6. Summation of factors from AP-42 Section 3.3 (10/1996), Table 3.3-2, *Speciated Organic Compound Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines.*
7. Highest single HAP emission factor is for Formaldehyde.

Engine Information

Engine Maximum Output (kW)[1]	Engine Output at 100% Load (hp)[1]	Fuel Consumption (gal/hr)[1]	Heat Input (MMBtu/hr)[2]
63	85	4.60	0.63

1. Based on manufacturer's specification for maximum engine output.
2. Based on fuel consumption rate and diesel heat content of 137,000 Btu/gal per AP-42 Appendix A.

Maximum Hourly Emission Rate

Pollutant	Potential Emissions (lb/hr)[1]	(tpy)[2]
NO_X	0.65	0.16
CO	0.69	0.17
PM_{10}	0.06	0.01
$PM_{2.5}$	0.06	0.01
SO_2	0.17	0.04
VOC	0.21	0.05
GHG (CO_2e)	98.12	24.53
HAP (total)	2.26E-03	5.64E-04
HAP (single)	7.02E-04	1.76E-04

1. Maximum hourly emissions for each generator equal the engine maximum output times the respective emission factor. Factors were based on either the maximum of the vendor or Tier 3 factors, where available. AP-42 factors were used where EPA or vendor data were not provided.
2. Annual emissions based on maximum hourly emission rate and annual operating hours of: 500

ATTACHMENT C

MANUFACTURER SPECIFICATIONS

Rating Specific Emissions Data - John Deere Power Systems

JOHN DEERE

Rating Data

Rating	4045TF280D	
Certified Power(kW)	63	
Rated Speed	1800	
Vehicle Model Number	OEM (Gen Set-Emergency)	
Units	g/kW-hr	g/hp-hr
NOx	4.2	3.1
HC	0.30	0.22
NOx + HC	N/A	N/A
Pm	0.24	0.18
CO	1.1	0.8

Certificate Data

Engine Model Year	2014
EPA Family Name	EJDXL04.5141
EPA JD Name	350HAM
EPA Certificate Number	EJDXL04.5141-011
CARB Executive Order	
Parent of Family	4045HFG81
Units	g/kW-hr
NOx	4.2
HC	0.24
NOx + HC	N/A
Pm	0.22
CO	0.6

* The emission data listed is measured from a laboratory test engine according to the test procedures of 40 CFR 89 or 40 CFR 1039, as applicable. The test engine is intended to represent nominal production hardware, and we do not guarantee that every production engine will have identical test results. The family parent data represents multiple ratings and this data may have been collected at a different engine speed and load. Emission results may vary due to engine manufacturing tolerances, engine operating conditions, fuels used, or other conditions beyond our control.

Emissions Results by Rating run on Dec-12-2013

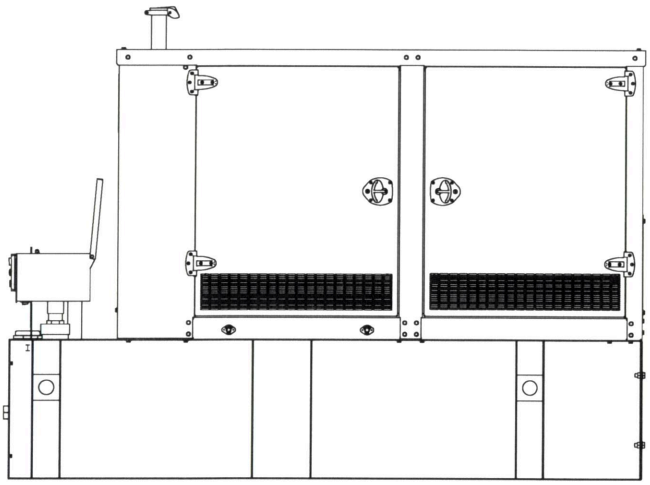
Model: 50REOZJE-T

KOHLER. Power Systems

Diesel

ISO 9001 KOHLER POWER SYSTEMS NATIONALLY REGISTERED

Tier 3 EPA-Certified for Stationary Emergency Applications



Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The 60 Hz generator set has a UL 2200 listing.
- The generator set accepts rated load in one step.
- The 60 Hz generator set meets NFPA 110, Level 1.
- A one-year basic limited warranty covers all systems and components. A five-year extended warranty is also available.
- The unique Fast-Response™ X excitation system delivers excellent voltage response and short circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
- A shutdown sensor prevents engine overheating caused by low coolant level.
- Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
- Sound attenuated enclosure has a sound pressure level of 66 dB(A) at 7 m (23 ft.).
- The secondary containment generator set subbase fuel tank meets UL 142 tank requirements. The inner (primary) tank is sealed inside the outer (secondary) tank. The outer tank contains the fuel if the inner tank leaks or ruptures.
  - 848 L (224 gal.) fuel tank capacity, 795 L (210 gal.) usable
  - 19 L (5 gal.) spill/fill containment
  - 90% high fuel alarm with panel
  - 95% overflow prevention valve (OPV)
- The design allows locating the non-serviceable (back) side of the generator set to be within 610 mm (24 in.) of non-combustible surfaces. This can save valuable ground space where space is limited.
- The generator set has front accessibility to all routinely serviced components including:
  - Air filter
  - Battery
  - Battery charger
  - Fuel/water separator
  - Oil filter

Generator Set Ratings

				130°C Rise Standby Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**
4P7BX	120/208	3	60	50/63	173
4Q7BX	120/240	1	60	50/50	208

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. *Standby Ratings:* The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Obtain technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. GENERAL GUIDELINES FOR DERATION: *Altitude:* Derate 0.5% per 100 m (328 ft.) elevation above 2300 m (7546 ft.). *Temperature:* Derate 2.0% per 10°C (18°F) temperature above 25°C (77°F).

Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Rare-Earth Permanent-Magnet
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	3-Phase Sensing, ±0.5%
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
208 V 4P7BX (12 lead)	180
240 V 4Q7BX (4 lead)	113

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

Application Data

Engine

Engine Specifications	
Manufacturer	John Deere
Engine model	4045TF280
Engine type	4-Cycle, Turbocharged
Cylinder arrangement	4 Inline
Displacement, L (cu. in.)	4.5 (275)
Bore and stroke, mm (in.)	105 x 127 (4.19 x 5.00)
Compression ratio	19.0:1
Piston speed, m/min. (ft./min.)	457 (1500)
Main bearings: quantity, type	5, Replaceable Insert
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	63 (85)
Cylinder head material	Cast Iron
Crankshaft material	Forged Steel
Valve material:	
Intake	Chromium-Silicon Steel
Exhaust	Stainless Steel
Governor: type, make/model	Mechanical, Stanadyne DB4
Frequency regulation, no-load to full-load	3–5%
Frequency regulation, steady state	±0.33%
Frequency	Fixed
Air cleaner type, all models	Dry

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m^3/min. (cfm)	19.2 (679)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	579 (1074)
Maximum allowable back pressure, kPa (in. Hg)	7.5 (2.2)
Exhaust outlet size at engine hookup, mm (in.)	83 (3.27)

Engine Electrical

Engine Electrical System	
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	75
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating	One, 640
Battery voltage (DC)	12

Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	11.0 (0.44)
Fuel return line, min. ID, mm (in.)	6.0 (0.25)
Max. lift, engine-driven fuel pump, m (ft.)	1.8 (6.0)
Max. fuel flow, Lph (gph)	45 (16.5)
Fuel prime pump	Manual
Fuel filter	
Secondary	5 Microns @ 98% Efficiency
Water Separator	Yes
Recommended fuel	#2 Diesel

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.)	14.7 (15.5)
Oil pan capacity with filter, L (qt.)	15.6 (16.5)
Oil filter: quantity, type	1, Cartridge
Oil cooler	Water-Cooled

Application Data

Cooling

Radiator System	
Ambient temperature, °C (°F)*	50 (122)
Engine jacket water capacity, L (gal.)	8.5 (2.25)
Radiator system capacity, including engine, L (gal.)	17.2 (4.6)
Engine jacket water flow, Lpm (gpm)	144 (38)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	36 (2049)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	533 (21.0)
Fan, kWm (HP)	1.9 (2.4)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)

* Enclosure reduces ambient temperature capability by 5°C (9°F).

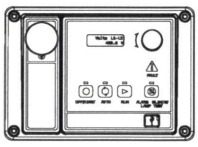
Operation Requirements

Air Requirements	
Radiator-cooled cooling air, m^3/min. (scfm)‡	125 (4400)
Combustion air, m^3/min. (cfm)	5.3 (187)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	13.4 (760)
Alternator, kW (Btu/min.)	7.6 (435)

‡ Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Fuel Consumption		
Diesel, Lph (gph) at % load	**Standby Rating**	
100%	17.4	(4.6)
75%	13.5	(3.6)
50%	9.4	(2.5)
25%	5.5	(1.5)

Controllers



Decision-Maker® 3000 Controller
Provides advanced control, system monitoring, and system diagnostics and remote monitoring compatibilities.

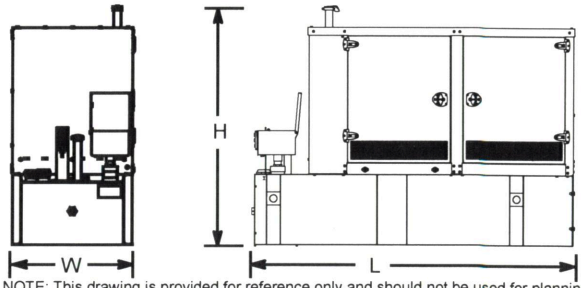
- Digital display and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Scrolling display shows critical data at a glance
- Integrated hybrid voltage regulator with ±0.5% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability
- Remote communications:
  - Via Modbus or Ethernet (TCP/IP, SNMP)
  - Modbus to Ethernet converter
  - Relay outputs:
    - Critical failure (Unit will not start or shutdown)
    - Fuel leak/overfill
    - Generator running
    - Low fuel
    - Major fault
    - Minor fault (Prealarms)

Refer to G6-100 for additional controller features and accessories.

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the
US and Canada, phone 1-800-544-2444
KOHLERPower.com

Dimensions and Weights

Overall Size, L x W x H, mm (in.):	
with enclosure	2800.9 x 1061.7 x 2056.7 (110.27 x 41.80 x 80.97)
Weight (radiator model), wet, kg (lb.):	1651 (3640)



NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2014 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Deere & Company**
(U.S. Manufacturer or Importer)

Certificate Number: **EJDXL04.5141-011**

Effective Date: 09/10/2013

Expiration Date: 12/31/2014

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 09/10/2013

Revision Date: N/A

Model Year: 2014
Manufacturer Type: Original Engine Manufacturer
Engine Family: EJDXL04.5141

Mobile/Stationary Indicator: Stationary
Emissions Power Category: 56<=kW<75
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: Non-standard Non-After Treatment Device Installed, Smoke Puff Limiter, Engine Design Modification

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.